

Material Name: MACOR

SDS ID: C-588

*** Section 1 - Product and Company Identification ***

Glass Codes: 9657**Chemical Name:** Glass ceramic**Product Use:** Used in the manufacture of glass articles**Manufacturer Information**

Corning SAS
 Rue Saint Laurent
 BP 90094 - Bagneaux sur Loing
 77792 Nemours CEDEX, France

Phone: 33 (0) 164 454 395
 Emergency # 24 Hr. Chemtrec (International) (703) 527-3887
 24 Hr. U.S. CHEMTREC: (800) 424-9300

General Comments

NOTE: CHEMTREC telephone number is to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals.

*** Section 2 - Hazards Identification ***

GHS Classification

This article is not classified according to GHS Classification criteria.

GHS LABEL ELEMENTS**Symbol(s)**

None

Signal Word

None needed according to classification criteria.

Hazard Statements

None needed according to classification criteria.

Precautionary Statements**Prevention**

Do not breathe dust. Wash thoroughly after handling.

Response

Get medical advice/attention if you feel unwell.

Storage

None

Disposal

Dispose of material in accordance with all local, regional, national and international regulations.

Other Hazards

Dust or powder may irritate eye tissue. Dust or powder may irritate the skin. Rubbing may cause abrasion of cornea. Repeated inhalation of dust of this product in very large amounts may cause damage to the lung.

*** Section 3 - Composition / Information on Ingredients ***

CAS	Component	Percent
66402-68-4	Ceramic materials and wares, chemicals	100
Not Available	Aluminum Oxides (**See NOTE Below)	<20
Not Available	Fluorides (**See NOTE Below)	<7

Component Related Regulatory Information

This product may be regulated and have exposure limits as identified in Section 8.

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Component Information/Information on Non-Hazardous Components

This glass article is a solid material produced by combining various raw materials (e.g. oxides, etc.), melting these components together, and cooling to a non-crystalline solid having its own unique properties.

Processing of this article may produce dusts or fumes which are considered hazardous.

****NOTE:** This component is not a separate component and does not exist in the form of a free oxide, but is included in the glass product. The fluoride component is bound with calcium, potassium, magnesium, or aluminum.

Japan Chemical Substances Control

Not applicable.

***** Section 4 - First Aid Measures *******First Aid: Eyes**

Eye injuries from glass particles should be treated by a physician immediately.

First Aid: Skin

Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.

First Aid: Ingestion

The material is a glass article, and ingestion is unlikely.

First Aid: Inhalation

If dust is causing irritation, move person to non-contaminated air. Call a physician if symptoms persist.

***** Section 5 - Fire Fighting Measures *******General Fire Hazards**

See Section 9 for Flammability Properties.

This material will not burn.

Hazardous Combustion Products

Material may form irritating and toxic gaseous oxides at high temperatures.

Extinguishing Media

Use methods for the surrounding fire.

Unsuitable Extinguishing Media**Fire Fighting Equipment/Instructions**

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

***** Section 6 - Accidental Release Measures *******Recovery and Neutralization**

Avoid creating dusts.

Materials and Methods for Clean-Up

If glass is crushed and airborne dust can be generated then use a dust suppressant or HEPA vacuum. Place in a closed container.

Emergency Measures

None necessary.

Personal Precautions and Protective Equipment

Wear appropriate protective equipment and clothing during clean-up.

Environmental Precautions

Do not flush into sanitary sewer systems, drains or surface water.

Prevention of Secondary Hazards

None known.

***** Section 7 - Handling and Storage *******Handling Procedures**

Obtain special instructions for handling glass before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not breathe dust. Avoid contact of dust with skin and eyes.
Wash hands after handling.

Storage Procedures

Keep container closed when not in use. Store in a dry area. Store locked up.

Incompatibilities

None known.

***** Section 8 - Exposure Controls / Personal Protection *******Control Parameters****Component Exposure Limits****Ceramic materials and wares, chemicals (66402-68-4)**

ACGIH: 10 mg/m³ TWA (inhalable particles, recommended); 3 mg/m³ TWA (respirable particles, recommended, related to Nuisance particulates)

OSHA (Final): 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction, related to Nuisance particulates)

OSHA (Vacated): 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction, related to Nuisance particulates)

Aluminum Oxides (may apply to either metal, oxide, or insoluble compounds).

Note that the aluminum in this product is part of the glass product matrix.

ACGIH: 1 mg/m³ TWA (respirable fraction, related to Aluminum)

NIOSH: 10 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable dust, related to Aluminum)

OSHA (Final): 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

OSHA (Vacated): 10 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

JSOH: 2 mg/m³ OEL (Class 1 Dust, total dust); 0.5 mg/m³ OEL (Class 1 Dust, respirable dust)

Fluorides

ACGIH: 2.5 mg/m³ TWA (as F, related to Fluorides and Hydrogen fluoride)

OSHA (Final): 2.5 mg/m³ TWA (as F, related to Fluorides and Hydrogen fluoride)

OSHA (Vacated): 2.5 mg/m³ TWA (related to Fluorides and Hydrogen fluoride)

Component Biological Limit Values**Fluorides**

ACGIH: 3 mg/g creatinine Medium: urine Time: prior to shift Parameter: Fluorides (background, nonspecific); 10 mg/g creatinine Medium: urine Time: end of shift Parameter: Fluorides (background, nonspecific, related to Fluorides and Hydrogen fluoride)

Engineering Measures

If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Personal Protective Equipment: Respiratory

Not normally needed. If permissible levels are exceeded, use appropriate NIOSH approved dust respirator.

Personal Protective Equipment: Hands

Wear cut resistant gloves when handling glass and appropriate clothing to keep dust from skin.

PERSONAL PROTECTIVE EQUIPMENT**Personal Protective Equipment: Eyes**

Wear safety glasses with side shields.

Personal Protective Equipment: Skin and Body

Wear cut resistant gloves when handling glass and appropriate clothing to keep dust from skin.

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Hygiene Measures

Use good hygiene practices when handling this material including changing and laundering work clothing after use.

***** Section 9 - Physical & Chemical Properties *****

Appearance:	White solid	Odor:	None
Physical State:	Glass	pH:	Not applicable
Vapor Pressure:	Not applicable	Vapor Density:	Not applicable
Boiling Point:	Not applicable	Melting Point:	Not applicable
Solubility (H2O):	Not applicable	Freezing Point:	Not applicable
Softening Point:	Not available	Molecular Weight:	Not applicable
Density:	2.52 g/cm ³	Flash Point:	Not applicable
Flash Point Method:	Not applicable	Auto Ignition:	Not applicable
Lower Flammability Limit:	Not applicable	Upper Flammability Limit:	Not applicable

***** Section 10 - Chemical Stability & Reactivity Information *******Chemical Stability**

Stable.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

None known.

Incompatible Products

None known.

Hazardous Decomposition Products

At very high temperatures irritating and toxic gaseous metallic oxides can be formed.

***** Section 11 - Toxicological Information *******Acute Toxicity****Component Analysis - LD50/LC50**

No LD50/LC50's are available for this product's components.

Immediate Effects

Overexposure to dusts of this product may produce eye irritation including redness, scratching of the cornea, and tearing. Mechanical irritation from inhalation of product dust may cause coughing, soreness of throat and nose, and sneezing. Very high exposures may cause difficulty in breathing, congestion, tightness of chest and hemorrhage. Fluoride ingestion may cause acute systemic poisoning. Fluoride has been reported to effect gastric, intestinal, circulatory, respiratory and nervous systems, as well as skin rashes and complaints related to bones, joints and muscles.

Delayed Effects

Repeated inhalation of dust of this product in very large amounts may cause damage to the lung.

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Dust or powder may irritate the skin. Mechanical rubbing may increase skin irritation. No components in this product are known to be absorbed through the skin.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Dust or powder may irritate eye tissue. Rubbing may cause abrasion of cornea.

Potential Health Effects: Ingestion

May cause temporary irritation of the throat, stomach, and gastrointestinal tract.

Potential Health Effects: Inhalation

Dusts of this product may cause irritation of the nose, throat, and respiratory tract.

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Respiratory Sensitization/Skin Sensitization

No information available for product.

Generative Cell Mutagenicity

No information available for the product.

Carcinogenicity**Component Analysis****Aluminum Oxides**

ACGIH: A4 - Not Classifiable as a Human Carcinogen (related to Aluminum)

Fluorides

ACGIH: A4 - Not Classifiable as a Human Carcinogen (related to Fluorides and Hydrogen fluoride)

Reproductive Toxicity

No information available for the product.

Specified Target Organ General Toxicity: Single Exposure

No information available for the product.

Specified Target Organ General Toxicity: Repeated Exposure

No information available for the product.

Aspiration Respiratory Organs Hazard

No data available.

Other Toxicological Information

Under normal conditions of use for glass products, the likelihood of inhaling or ingesting amounts necessary for these effects to occur is very small.

***** Section 12 - Ecological Information *******Ecotoxicity**

No information available for the product.

Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility in Soil

No information available for the product.

Environmental Fate

No information available.

***** Section 13 - Disposal Considerations *******Waste Disposal Instructions**

Waste must be handled in accordance with all applicable regulations.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

***** Section 14 - Transportation Information *******IATA Information****Shipping Name:** Not regulated as dangerous good.**ICAO Information****Shipping Name:** Not regulated as dangerous good.

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IMDG Information

Shipping Name: Not regulated as dangerous good.

ADR Information

Shipping Name: Not regulated as dangerous good.

***** Section 15 - Regulatory Information *******Regulatory Information**

No additional information.

Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS	MITI
Ceramic materials and wares, chemicals	66402-68-4	Yes	Yes	Yes	Yes

Japan Designated Chemical Substances (PRTR Law)

No component(s) are listed.

Japan Poisonous & Deleterious Substances

No component(s) are listed.

Industrial Safety and Health Law - Flammable Solvents

The following components are identified in Table 1 of the Enforcement Order of the Industrial Safety and Health Law which, if used in the workplace, require designation of an Operations Chief during confined space work and periodic machine inspections.

Aluminum Oxides

Ignitable substance (powder, related to Aluminum)

Industrial Safety and Health Law - Organic Solvents

This product contains no components are identified in Table 6-2 of the Enforcement Order of the Industrial Safety and Health Law which, if used in the workplace, require designation of an Operations Chief during confined space work and periodic machine inspections.

Industrial Safety and Health Law - Label Disclosure

This product contains no harmful substances whose names are to be indicated on a container label as specified by Article 18 of the Enforcement Order of the Industrial Safety and Health Law.

***** Section 16 - Other Information *******MSDS History**

Revision 1.0000, 17-NOV-2011: New MSDS.

Questions regarding information found in this document should be directed to the address and phone number shown in Section 1.

If additional information is needed contact:

Corning, Incorporated.

Safety Management Services

MP-HQ-01-E1H22A

Corning, NY 14831

Tel. No. (607)-974-6926 or (607)-974-8002

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Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; mg/Kg = milligrams per Kilogram; mg/L = milligrams per Liter; mg/m³ = milligrams per Cubic Meter; MSHA = Mine Safety and Health Administration; NA = Not Applicable or Not Available; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; TDG = Transport Dangerous Goods; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System.

Other Information

Reasonable care has been taken in the preparation of this information, but Corning makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. Corning makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

End of Sheet C-588